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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,267	08/29/2003	Uri Elzur	13782US03	1986

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EXAMINER

AVELLINO, JOSEPH E

ART UNIT PAPER NUMBER

2143

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,267

Applicant(s)

ELZUR ET AL.

Examiner

Joseph E. Avellino

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-33 are presented for examination; claims 1, 16, and 25 independent.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5 and 7-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Boucher et al. (USPN 6,757,746) (hereinafter Boucher).

3. Referring to claim 1, Boucher discloses a system for offloading TCP processing, the system comprising:

- a host 100 (Figure 1);

- a network interface card (i.e. network interface device 102) (Figure 1) coupled to said host (see parallel bus connecting 102 with 100), said NIC comprising:

- a TCP enabled Ethernet controller (i.e. NIC including the ASIC 400 disclosed in Figure 21 of app. no. 09\464,283, USPN 6,427,173 incorporated by reference) comprising at least one internal elastic buffer (i.e. the transmit and receive sequencer 2104, 2105 Figure 21 of '173), wherein said TEEC processes an incoming TCP packet once and temporarily buffers at least a portion of said incoming TCP packet in said internal elastic buffer, said processing occurring

without reassembly (i.e. the packet is DMA'd over to the host memory 110 and no reassembly done within the TEEC) (col. 5, lines 40-60).

4. Referring to claim 2, Boucher discloses said at least one internal elastic buffer comprises a receive internal elastic buffer 2105 and a transmit internal elastic buffer 2104 (Figure 21, col. 25, lines 1-15 of '173).

5. Referring to claims 3 and 4, Boucher discloses incoming TCP packets are temporarily buffered in said receive buffer and outgoing TCP packets are temporarily buffered in said transmit elastic buffer (col. 17, lines 35-67; col. 25, lines 1-15 of '173).

6. Referring to claim 5, Boucher discloses said TEEC places at least a portion of said incoming TCP packet data into at least a portion of a host memory (Boucher, Figure 2; col. 5, lines 50-55).

7. Referring to claim 7, Boucher discloses out of order TCP packets are not reordered in a TEEC buffer (i.e. they are reordered in the host memory) (Figure 2).

8. Referring to claim 8, Boucher discloses said NIC does not require a dedicated memory for reordering out of sequence TCP packets (i.e. the host memory is used) (Figure 2).

9. Claim 9 is rejected for similar reasons as stated above (i.e. it is inherent that any packet received would be inserted in its correct placement in host memory as shown by Figure 2).

10. Claims 10-13 are rejected for similar reasons as stated above (i.e. the Office takes the term "highest hierarchy" as the best place to put the information, and "single copy operation" as a DMA transfer).

11. Referring to claim 14, Boucher discloses the TEEC comprises a single chip having the buffer integrated therein (i.e. integrated into the Apollo VT8501 MVP4 Northridge chip) (col. 6, lines 15-25).

12. Claims 15-33 are rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher.

13. Boucher discloses the invention substantively as described in claim 1. Boucher does not specifically state that only the elastic buffer is used to temporarily buffer at

Art Unit: 2143

least a portion of the incoming TCP packet, however it is well known that elastic buffers are used to buffer packets (i.e. receiving FIFO's for routers, etc.). BY this rationale, "Official Notice" is taken that both the concept and advantages of providing for utilizing only the elastic buffer to temporarily buffer a portion of the TCP packet is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Boucher to include that only the elastic buffer is used to buffer the packet in order to utilize faster on chip memory rather than off-chip RAM, resulting in faster uploads to the host processor as well as reduced overhead regarding retrieving information from off chip memory.

Response to Arguments

14. Applicant's arguments filed September 19, 2005 have been fully considered but they are not persuasive.

15. In the remarks, Applicant argues, in substance, that (1) Boucher does not disclose an internal elastic buffer, and (2) Boucher does not disclose buffering the data packet without reassembly, (3) it is not inherent that packets fragmented would not be reassembled in the NIC device, and (4) Applicant traverses the "Official Notice" that a NIC utilizes only the at least one internal elastic buffer to temporarily buffer said at least a portion of said incoming TCP packet.

Art Unit: 2143

16. As to point (1) Applicant will see that the data synchronization buffer 2200 is a buffer on the ASIC chip (by virtue of being in the receive sequencer) and is not a multi megabyte memory that is utilized for packet reordering, reassembly or retransmission (it is merely there to store the packet as it is clocked into the receive sequencer). By this rationale, the data synchronization buffer is equivalent to the claimed internal elastic buffer.

17. As to point (2), Applicant is utilizing the term “reassembly” in the claim for reassembling TCP/IP packets which were fragmented (see specification, page 11, ¶ 39). The memory used in the ASIC is not for this purpose, rather this is done in the host memory as can be seen in ‘173, Figure 23 and Figure 2, of Boucher.

18. As to point (3) Applicant is invited to look at Figure 2 of Boucher, where it is shown that subsequent data packets are received onto the NI device, which have headers stripped, and then the data is DMA’d directly over to the host memory, no reassembly is done in the NIC device, the reassembly is done at the host memory. By this rationale, the rejection is maintained.

19. As to point (4) the Office provides Susnow et al. (USPN 6,751,235) as support that only the elastic buffer is used to temporarily buffer at least a portion of the incoming packet. As shown in Figure 8, and col. 7, lines 30-55. It can clearly be seen that the elastic buffer is used to transition data from a network link to the core clock domain of

Art Unit: 2143

the VXB (i.e. virtual expansion bridge) thereby removing the chance of providing data overflow or underflow. By this rationale, the Office has satisfied its burden of proof that an elastic buffer can be used to buffer a portion of an incoming packet is well known in the art.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

21. Applicant employs broad language, which includes the use of word, and phrases, which have broad meanings in the art. In addition, Applicant has not argued any narrower interpretation of the claim language, nor amended the claims significantly enough to construe a narrower meaning to the limitations. As the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure,

Art Unit: 2143

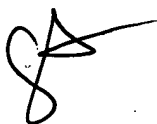
the Examiner is forced to interpret the claim limitations as broadly and as reasonably possible, in determining patentability of the disclosed invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.1993). Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims with scope parallel to the Applicant in the response, and reiterates the need for the Applicant to more clearly and distinctly, define the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

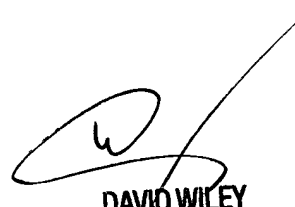
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2143

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JEA
September 28, 2005



DAVID WILEY
SUPERVISORY PATENT EXAMINER
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